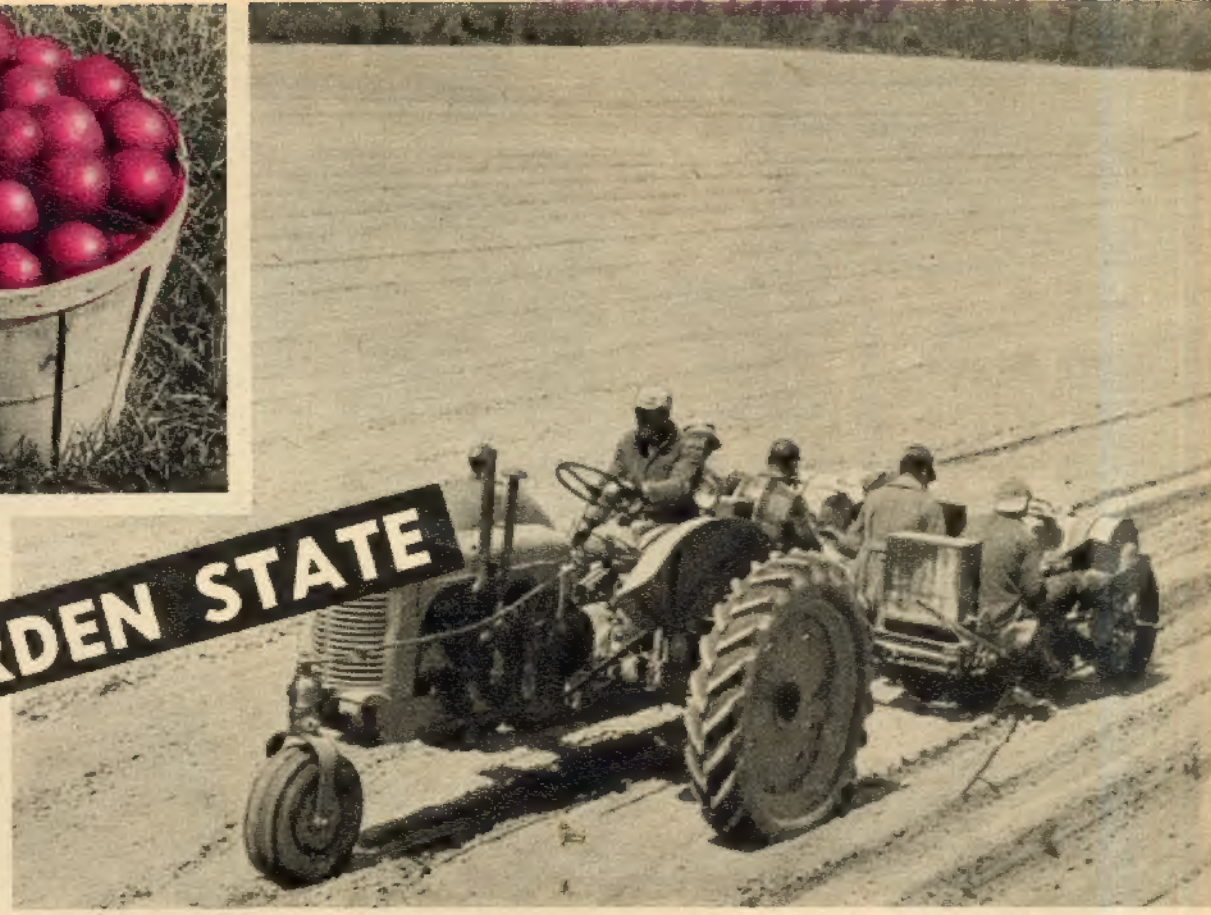




THE GARDEN STATE



Certified tomato plants—75 per cent Rutgers variety—from Georgia undergoing inspection (left) before transplanting (above) in South Jersey fields. Spraying (below) at Campbell Soup Co. research farm in Riverton, is an important preliminary plant growth step.

'LOVE-APPLE' of YESTERYEAR

*Botanically the Tomato Is a Fruit but
Commercially It's a Vegetable With High
Economic Significance for State's 4,000
Farmers Serving Markets and Canneries*

By JOHN T. CUNNINGHAM

ROMANCE embraces the tomato ripening in south Jersey fields, first touching its cheeks with faint red, then coloring them the scarlet of a valentine heart. This is the love apple, feared for centuries as a fruit which set maidenly pulses throbbing in an unmaidenly way; or worse, feared as a harbinger of death for any mortal tempted to bite its soft flesh.

Robert Gibbon Johnson ate a tomato on the steps of Salem County courthouse in 1820 and stopped the nonsense about the lethality of the red menace. At any rate, that's what

romantic historians persistently say. Later, Harrison Woodhull Crosby of Jamesburg encased the tomato in tin armor and the love apple changed overnight from blushing adolescence to practical adulthood.

Farmers are as romantic as anyone else, but the time and the place is not in the 35,000 New Jersey acres planted in tomatoes. Probably, as a matter of fact, as tomato growers stand in scorched fields in a time of drought or in muddied rows as rain falls at harvest time, all romantic thoughts flee their minds. They wonder instead how any man could be so touched as to grow tomatoes.

An annual balancing of the books gives the answer, in dollars and cents—some 12 to 15 million dollars annually in the Garden State, enough to make any grower love the tomato. That's why a visitor to south Jersey in June sees yellow tomato blossoms wherever his eye wanders; that's why a small army of workers spread over

the fields to pluck tomatoes in the waning days of summer.

YET romance remains for a visitor in tomatoland during canning season. Long lines of trucks, piled fantastically high with baskets of tomatoes, move slowly to canneries every day. Tomato-laden vehicles rumble endlessly through the darkened streets of dozens of south Jersey towns. Exotic spices and herbs fill the air in Bridgeton, Salem, Camden and Swedesboro telling of flavors transforming the tomato into chili sauce and catsup.

No vegetable is more important in New Jersey than the tomato—and it is a vegetable, legally and commercially. In justice to the purist who calls it a fruit, however, the tomato is so classified in botany. More exactly, it is a berry because of its seedy nature. But, vegetable, fruit or berry, the tomato is economically significant to some 4,000 Garden State farmers.

New Jersey tomatoes drip lucious

redness from full-color advertisements in national magazines proclaiming the importance of tomatoes in processed foods. Nevertheless, in their realistic color, magazine tomatoes can't help but make the real tomato fancier yearn for a thick red slice between two well-buttered pieces of bread. Thus, both facets of the state's tomato picture appear—because the tomato's importance depends both on sales to processors and on sales in the fresh market.

All the tomato's commercial consequence is scarcely more than a single century old, since a hundred or so years ago prejudices against the tomato ran strong. Two New Jersey happenings—one as possible as a legend, the other as factual as a can opener—stilled forever the prejudices. Those happenings were the doings of Col. Robert Gibbon Johnson of Salem town and Harrison Woodhull Crosby of Jamesburg.

Col. Johnson earned great wealth

This is the fifth in a series of articles on New Jersey's highly diversified agriculture, vigorous and growing despite the constant inroads of industrial and residential development. Next week: Potatoes (white and sweet).



Heavy tomato crop picked by army of workers on Raymond Abrams Farm in Vincentown is transferred from field to market truck. Tomato fleet (below), consigned to Campbell, assembling on Camden parking lot. Tomatoes for processing total over 200,000 tons annually.



from the soils of Salem County and deserved to prosper. He studied advanced agricultural practices, sowed and reaped accordingly. Inevitably he experimented with the tomato in his vast fields. If any of his good Quaker neighbors so much as touched the love apple, though, it is not recorded.

THEN, the story goes, Col. Robert Gibbon Johnson stood high on the steps of Salem courthouse on a late summer day in 1820 and announced in stentorian tones that he would eat a tomato. Writers of the present century tell of people waiting fearsomely for the respected colonel to die a horrid death. But he lived, without so much as a seed on his waistcoat, and the tomato soared to prominence.

Significantly, to those who regard this as a pleasant myth, no writers of Col. Johnson's own day mentioned the awe-inspiring spectacle. Possibly that's because Dr. Ephriam Buck had been experimenting with tomatoes in Cumberland County as early as 1812, or because Thomas Jefferson had written about the tomato in 1781, or because Italians had used the tomato in their savory sauces long before 1700.

Unquestionably Col. Johnson did advance materially the cause of the tomato, but more likely through years of patient work than at a single bite. Actually, tomatoes were regularly quoted on the New Orleans market in 1812. Understandably the warm-blooded folk of the bayous didn't mind if the love apple quickened the pulses of love—such a characteristic might possibly have made the pomme d'amour even more attractive in New Orleans.

THE story of Robert Johnson merits repeating, but even his efforts didn't make the tomato a household word. Many Americans still feared the tomato as poisonous for another half century (and, in fact, the tomato IS a harmless kin to the deadly nightshade family). Many a mother kept tomatoes from her daughters until late in the 19th century, reasoning that if the love apple didn't kill, it might induce a fate worse than death.

Harrison Woodhull Crosby of Middlesex County could well be the most important man in all tomato history because it was he who first sealed the seedy redcoat in tin cans. Crosby started his experiments at his Jamesburg farm, then widened his studies as assistant steward and chief gardener of Lafayette College from 1845 to 1849.

IN September 1847 Mr. Crosby soldered lids on six well-scoured little seashore sand pails, leaving a small hole in the lid. He stewed tomatoes, forced them through the hole, then sealed the opening by soldering on another piece of tin. As much of a showman in his own way as Col. Johnson, Mr. Crosby the next year filled 1,000 tin pails and sent his red propaganda to Queen Victoria, President James K. Polk, senators and congressmen and the editor of The New York Tribune.

Letters of thanks and delight poured

in. The tomato canning industry bubbled out of the Lafayette kitchen, off the Jamesburg farm and within 40 years spawned a half hundred offspring in south Jersey. Tomato canners started operations in sheds, in stables, in kitchens—but of them all, two young men of Camden left by far the greatest impression.

At about the same time that Harrison Woodhull Crosby ended his canning days making "Crosby's Celebrated Ketchup" in Jamesburg, Abraham Anderson and Joseph Campbell combined in 1869 to found in Camden the firm which is today Campbell Soup Co.—the world's biggest user of tomatoes.

Anderson and Campbell packed many things, but their fame came from the famed Beefsteak Tomato—"so large that only one was packed to a can" (and so large that the label showed two men lugging one tomato). The pair split up in 1876, but Joseph Campbell prospered on his own. His

firm quickly rose to a position of dominance in the tomato field.

WHETHER the tomato would have achieved its prominence in New Jersey without the canneries is problematical, boiling down to the question of which came first, the tomato or the tin? As an item for the fresh market, the South Jersey tomato went far and wide—even staid old Boston bought New Jersey love apples in the 1890s.

Howard Russ of Delanco told the State Horticultural Society in 1894 that the railroad station in his little Burlington County village shipped as many as 1,500 baskets of tomatoes a day to Boston. Mr. Russ, by the way, coolly sliced away any thoughts about the romance of tomatoes—from his viewpoint. He said: "I don't grow tomatoes because I like to; it is because of the profit there is in them."

As far as growing tomatoes for canners, Mr. Russ said nay—"not much money and a great deal of work." Nevertheless, by then tomatoes for canners brought more than \$100,000 annually to growers in Cumberland County, although many of them felt like Mr. Russ that canhouses should be a last resort. Ripe red tomatoes brought far more money in New York and Philadelphia markets, where they sold by the pound rather than by the bushel.

TOMATO canners, in a way, were caught in a one-way squeeze—idle when the farmer could sell in the fresh market, frantically busy when the "glut" set tomato growers on the road to the canhouse or down to the river to load their baskets on barges bound for the processors. The steam whistle at the canning factory came to signal the ups and downs of Tomatoedom—sounding even in the middle of the night if the long strings of wagons started to roll into town. Every tomato man, right down to the seediest, willingly sold to the canhouse during the "glut."

By 1900 canhouse prices were better and most south Jersey growers keyed themselves to the tin men—though

(Continued on Following Page)



Cleaning certified seed on which the rich tomato industry rests. LEFT: Dr. Lyman G. Schermerhorn (left) of the New Jersey Experiment Station, who perfected the Rutgers tomato in 1934, and John T. Kitchen, research associate, visit the Camden inspection station.

JERSEY TOMATOES

(Continued From Preceding Page)

only a man with seeds in his head completely ignored the fresh market. About 50 New Jersey canneries bought tomatoes in 1902, particularly in Cumberland, Salem and Burlington counties. The State Board of Agriculture reported that in 1902 tomatoes were grown "the state over" but only the region south of a line between Trenton and New Brunswick had commercial importance.

Perhaps the third most important year in the New Jersey tomato picture (from a chronological viewpoint) was 1912, when Campbell Co. decided tomato soup was to be its most magical elixir—and appointed Harry F. Hall to bring some order out of the uncertain grower-canner relationship then still pervading the state. Hall embarked on a vigorous agricultural program to encourage more and better tomatoes (and more and better canner-farmer contracts).

Before Mr. Hall's time Campbell's bought all of its tomatoes except 700 acres in the uncertain open market. Quality and quantity fluctuated widely. Contracts, what few there were, had only token meaning. Efforts to keep delivered tomatoes at a high quality level proved futile; many growers, for example, scorned subtle suggestions that they put springs in their wagons. All canners shared Campbell's woes, of course—but, let it be pointed out, there were years when the farmer didn't exactly fare handsomely at the hands of the canners either.

CONTRACTS became both common and meaningful by 1917, a year in which New Jersey farmers sold 106,000 tons of tomatoes to canhouses for a creditable \$3,018,000. Hall, speaking at a meeting in 1915, asked the question: "Does it pay to grow for canners?" Candidly he answered, yes and no. He said thousands of farmers in Burlington and adjoining counties

seemed reasonably happy with their contracts, but admitted the fresh market still had strong temptations.

Mr. Hall will probably be best remembered for the impetus he gave to the search for better tomato varieties. At the turn of the century a tomato book listed 327 varieties (many undoubtedly duplicates). The tomato of Col. Johnson's day had been small and watery, later tomatoes were big, coarse and seedy. Possibly the best tomato of pre-World War I days was the Trophy, a respectable medium-size, smooth-skinned offshoot of the marriage of a small, watery mother and a big, coarse father.

As for early ripening tomatoes, Mr. Hall in 1915 said the best variety at the time had been introduced in 1895. Although still popular 20 years later, that tomato drew this somewhat less

than laudatory comment from Mr. Hall: "It's still the same soft old bag of water."

THE search for a better tomato went on. At the same time, as the planting of tomatoes reached into ever bigger areas, a means had to be found to make available millions of plants at one time—all of them to be ready in a two or three-week planting period in May. R. Vincent Crine of Monmouth County found the remedy during World War I: Grow the plants in the South, ship them to New Jersey in May.

Mr. Crine first grew plants in South Carolina in 1918 and in 1919 moved to Georgia, where for years he supplied the Northern trade. Today 7,000 Georgia acres are used to grow billions of tomato plants for much of the country. Practically all the tomato plants now used in New Jersey are snatched from Georgia fields, hurried north in trucks and Railway Express

cars and planted immediately after arrival. Those plants are only passing through Georgia, by the way; virtually all of the seed comes from certified acres in New Jersey.

All that had gone before came into full flower in 1929, when New Jersey led the nation in value of tomatoes for processing, although it placed second to Indiana in both acreage and tonnage. High prices per ton gave this state top value. New Jersey's 33,000 tomato acres for processing produced 214,500 tons of tomatoes in 1929. In addition, another 11,850 acres produced 2,429,000 bushels of redskins for the fresh market.

In that year of 1929 a few venture-some canners began tentatively to sell tomato juice, with E. R. Pritchard of Bridgeton being one of the earliest pioneers. The public welcomed the new rich bearer of vitamins A and C and canners rushed to meet swelling demands. Now, more than ever, a top-grade tomato had to be found; a tomato rich in pulp and as red inside where the seeds lay as it was scarlet on the surface.

QUIETLY Prof. Lyman G. Schermerhorn and his aides at the New Jersey Experiment Station at Rutgers nursed along a bright young tomato baby they had found in 1928 by wedding a Marglobe to a J.T.D. The baby seemed perfect in the second generation raised in 1929—full, vigorous foliage; big red fruit, free from skin blemishes. By 1934 descendants of the original find had been narrowed down to four promising selections, nameless except for Nos. 444, 490, 497 and 500.

Seventy-five farmers ranging from Montague in Sussex County to Rio Grande in Cape May County grew the four Rutgers-bred selections. By summer's end, Prof. Schermerhorn picked No. 500, a large plant with a heavy crop of uniformly colored fruit—which ripened from the inside out, making it a perfect "juicer." On Sept. 19, 1934, the experiment station christened No. 500 and gave to the world what was (and is) probably the outstanding tomato in history—the Rutgers.



Bins for separating and weighting canhouse tomatoes according to grades, an important factor in processing the vegetable since 1932.



Reproduction of label from one of Campbell & Anderson's original tomato cans with a "beefsteak so large that only one was packed to a can." RIGHT: Incoming tomatoes on conveyor belt are washed before entering processing machinery at Campbell Soup Co. in Camden.

The Rutgers has lived steadily for exactly two decades, its strain carefully protected by exacting care in seed selection at the experiment station. All "mother" stock is kept at Rutgers; of 73,000 pounds of Rutgers seed certified in 1952, for example, none was more than two years removed from plants grown at the station in New Brunswick. Such care with the parent has kept the Rutgers tomato from being violated in open fields by wind-loose and fancy-free seeds.

ONCE Rutgers tomatoes were used by 75 per cent of commercial growers the nation over; now other varieties have replaced it in the tremendous California tomato acreages. Today, nevertheless, nearly 75 per cent of all plants set in New Jersey soil are Rutgers. Far more than one billion certified Rutgers plants are started in Georgia every spring.

Two new early ripening varieties perfected since World War II—Campbell's Improved Garden State and Prof. Schermerhorn's Queen's—both have the Rutgers tomato in their ancestry. It's safe to say that most new varieties countrywide have some good, red Rutgers blood in them.

The Rutgers from the start blended tastefully and colorfully into tomato juice operations, and it also fit in very nicely with a new grading program established by the U.S. Department of Agriculture in 1926. Three years later a USDA grading experiment was undertaken at P. J. Ritter Co. in Bridgeton, strictly as an educational venture—since both canner and grower cautiously agreed on a flat price in advance. Finally, in 1932, four companies contracted solely on the basis of grade and the old uncertain ways seeped away. Now nearly all tomatoes are bought by processors through grading operations supervised by the New Jersey Department of Agriculture.

ON the eve of World War II, New Jersey farmers gained \$7,410,000 from tomatoes (nearly 70 per cent of that earned from processors). Ahead

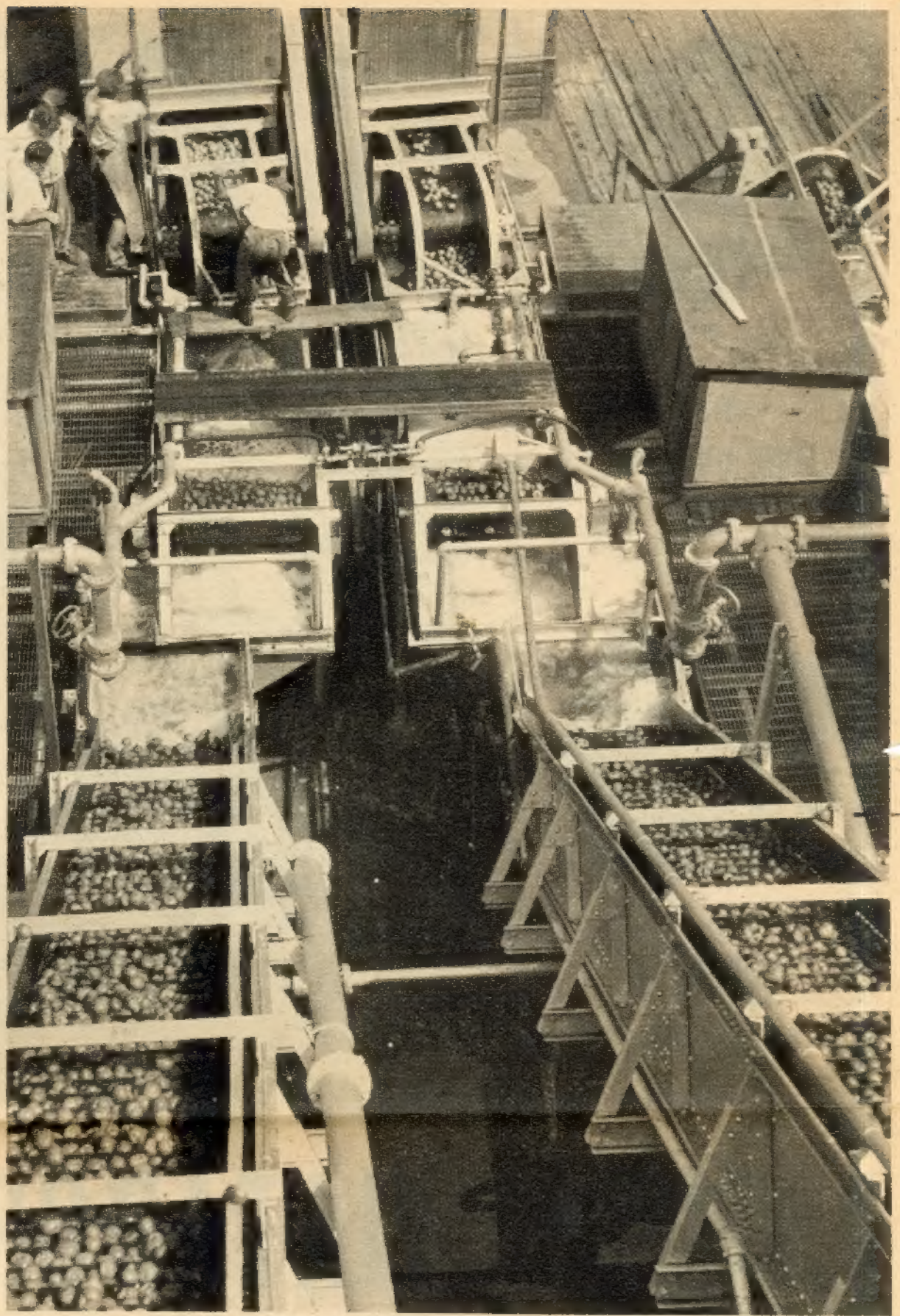
stretched more than a decade of unprecedented demands for all kinds of tomato products. Acreage soared in New Jersey—to 46,000 acres in 1944. Acreage soared too in California—by 1953 California produced 50 per cent of all United States tomatoes, compared with 20 per cent before the war.

Today the New Jersey tomato situation is in a fluid state, particularly in the canneries. Production of tomatoes for processing, which had averaged 248,000 tons annually in the state from 1949 to 1951, dropped off alarmingly to 187,000 tons in 1952. Suddenly it shot up to 299,000 tons in 1953—the best year in Garden State tomato history. Last year it leveled back down to about 200,000 tons. Acreage has declined—34,000 acres in 1952, 27,000 acres in 1953, 23,000 acres in 1954.

There are several factors. Weather, for one thing. The years of 1952 and 1954 couldn't have been worse—dry weather during the growing season, heavy rains at harvest time. The year 1953, on the other hand, couldn't have been better—good rains as plants grew, slight rain as tomatoes were picked. Moreover, production per acre is leveling off at a high figure, between eight and nine tons per acre (high for New Jersey, but only half of what the average California acre produces).

Tomatoes for processing are likely to level off somewhere between the 1953 high and the 1954 medium. On the other hand, yields of tomatoes for sale over the counter in the fresh market were higher than ever in 1954. Fresh market tomatoes occupied 9,400 acres, accounted for 1,739,000 bushels. California's refrigerated tomatoes aren't likely ever to push aside in the housewives' favor the warm vine-matured fruit from "Jersey."

TOMATO farmers are a proud lot, made prouder and more productive by the unique Ten-Ton Club started in 1934—largely through the influence of Harry Hall, the venerable and progressive leader of Campbell's farm program. Eligibility is simple; any



farmer who contracts to grow five acres of tomatoes (for any canner) is eligible if he averages 10 tons or more per acre.

Only 12 growers qualified in 1934, and that rose to a record high of 767 in 1951, followed by 669 in 1953's good tomato year and 289 in 1954's poor season. A Ten-Tonner eagerly seeks advice on fertilization, rotation, spraying, plant variety—and carefully follows the advice. Given a break in the weather, a top-notch grower seldom falls below 10 tons per acre (compared with 15 years ago when a Campbell's Soup movie proudly proclaimed, "SOME of our growers get 10 tons per acre!").

The output per acre has been particularly dramatic in the last eight years; in 1946 New Jersey needed 36,000 acres to get 218,000 tons of tomatoes, while in 1954 23,000 acres yielded 200,000 tons (in an unfavorable year, weatherwise).

New Jersey's tomato grower isn't a big fellow as far as land goes. Many grow only 3 or 4 acres, many grow 10 to 15 acres, few grow more than 100 acres of tomatoes. The canneries—such as Campbell's Soup, Hunt & Ritter's in Bridgeton, California Packing

Co. in Swedesboro, Heinz in Salem, Stoke's in Vincentown and Stokeley's in Trenton—compete vigorously to contract tomato crops, from Cape May to Hunterdon County. Tomatoes seldom stand as the only source of income, but many a farmer uses 10 or more good acres to pick up a profit even in a year when his major item of farm income seems likely to dip into the red.

AS wintry blasts sweep the lands Down Jersey, a billion and a half certified New Jersey seeds will find a furrow in Georgia soil—there to grow slowly until May calls them north to home. The yellow blossoms will be vivid against the green foliage in June, and then it'll be tomato time again in south Jersey. The advertisements once more will glow with traditionally rich beauty, with slogans only slightly more sophisticated than that in the first Campbell Kids ad in 1905: "No rose has such a tempting hue, as Nature's hand has painted you . . ."

So easily bruised, so tender in the sun, so torn by rain; that is the tomato. This year's drought and next year's sodden rains can ruin a man, but the tomato calls him on. That is the song of the love apple.